Claims Defining the Invention Are:

'1 A lock mountable to a displaceable wing including a casing and operating means including at least one hand operable unlatching lever operable in an unlatching direction to cause a corresponding unlatching cam to displace in an unlatching direction,

an engaging member supported by the casing and displaceable between a fully displaced disposition and a fully retracted disposition,

the unlatching cam being operably connected to the engaging member by an angularly displaceable unlatching rocker supported at a pivotal joint disposed between the engaging member and the unlatching cam, the unlatching rocker having a first arm operably associated with an unlatching arm of the unlatching cam and a substantially opposed second arm operably associated with the engaging member,

the unlatching cam being displaceable in an unlatching direction to cause unlatching arm to displace the first arm of the rocker to displace the second arm in the opposite direction to thereby cause the engaging member be displaced towards the fully retracted disposition.

'2 A lock according to Claim 1, wherein the at least one unlatching lever comprises an angularly displaceable unlatching lever having a free end disposed from its pivotal axis, said free end being displaceable downwardly in an unlatching direction and displaceable upwardly in an opposite direction.

'3 A lock according to Claim 1 or Claim 2, including a displaceable deadlocking slide supported within the casing and characterized by a deadlocking configuration in which a leading end of the deadlocking slide and the engaging member co-operate to restrain the engaging member from being displaced from the fully displaced position.

'4 A lock according to Claim 3, wherein the deadlocking configuration is characterized by an engaging shoulder of the deadlocking slide being behind an engageable shoulder of the engaging member.

'5 A lock according to Claim 4, including a hand operable locking member operably connected to the deadlocking slide, the deadlocking slide being displaceable by the operation of the locking member.

'6 A lock according to Claim 4, wherein the locking member is operably connected to the deadlocking slide by a locking cam supported within the casing.

'7 A lock according to Claim 6, wherein the operating means comprises an interior unlatching cam corresponding to the interior unlatching lever and an exterior unlatching cam corresponding to the interior unlatching lever,

and wherein the locking member is operably connected to a lever locking cam supported within the exterior handle assembly,

said deadlocking slide being displaceable to the deadlocking configuration by the locking member simultaneously as the lever locking cam is displaced to a locking disposition where it causes the exterior unlatching lever to be restrained against displacement,

the deadlocking configuration being characterised by the second arm of the unlatching rocker being forward of a leading end of the deadlocking slide, the interior unlatching lever being displaceable to displace the interior unlatching cam to displace the unlatching rocker whereby to cause the second arm to contact the leading end of the deadlocking slide to displace the deadlocking slide away from deadlocking engagement to enable the engaging member to be displaced towards the fully retracted disposition while simultaneously causing the lever locking cam to be displaced from the locking disposition to free the exterior unlatching lever.

'8 A lock according to Claim 7, wherein the leading end of the deadlocking slide includes the engaging shoulder and an adjacently disposed ramped unlocking shoulder, and wherein the deadlocking configuration is further characterized the ramped unlocking shoulder being behind a nose portion of the second arm of the unlatching rocker.

'9 A lock according to Claim 8, where the unlocking shoulder is engageable by the nose portion to be displaced from the engaging member as the nose portion slides over the upwardly ramped edge defining the unlatching shoulder.

'10 A lock according to Claim 7, wherein the lever locking cam is displaced towards the locking configuration when the deadlocking slide is displaced to the deadlocking configuration, the locking of the exterior unlatching lever comprising displacement of a stop blade of a stop slide into a stop slot of a cupped member connected to the exterior unlatching lever, the stop slide being displaced towards the cupped member against biasing means by angular displacement of the lever locking cam, the angular displacement causing one of a pair engaging shoulders to slide over a lower substantially horizontally surface of the stop slide to enter a radially defined recess.

'11 A lock according to Claim 10, wherein the lever locking cam is displaced in response to operation of the locking member.

'12 A lock according to Claim 10, wherein the lever locking cam is displaced in response to displacement of the deadlocking slide by biasing means.

'13 A lock according to any one of the above claims, including an angularly displaceable driver member having an undisplaced disposition and being connectable to at least one remote engaging member to actuate the remote engaging member,

said driver member being displaceable towards the undisplaced disposition by displacement of an unlatching cam in an unlatching direction, said driver member being displaceable from the undisplaced disposition by displacement of an unlatching cam in the opposite direction.

'14 A lock according to Claim 13, wherein the pivotal axis of the diver member is substantially midway between the front and rear edges of the casing and orthogonal to the sides of the casing while the pivotal axis of the unlatching lever is parallel and rearwardly disposed of the driver member pivotal axis.

'15 A lock according to Claim 14, wherein the pivotal axis of the unlatching cam is within the diameter that defines the periphery of the annular driver whereby to minimize the space within the casing occupied by the driver annulus and unlatching cam subassembly.

'16 A lock according to Claim 13 or any claim dependent on Claim 13, including at least one remote engaging member vertically removed from the casing and operably connected to the driver member by a vertically elongated drive member resistant to buckling to be actuateable by unlatching lever displacement.

'17 A lock according to Claim 13 or any claim dependent on Claim 13, wherein the diver member comprises a disc-like annular driver and wherein each unlatching cam includes a drive arm that extends to occupy a peripheral drive recess of the annular driver whereby to operably connect the unlatching cam and annular driver.

'18 A lock according to Claim 17, including an upper and a lower remote engaging member each vertically removed from the casing, said remote engaging members being operably connected to the driver member by an upper vertically elongated drive member resistant to buckling hand a lower vertically elongated drive member resistant to buckling respectively to be simultaneously actuateable by unlatching lever displacement.

'19 A lock according to Claim 18, including an upper drive member connected to a first side recess in the driver annulus adjacent the peripheral edge and a lower drive member connected to a radially opposed second side recess in the driver annulus adjacent the peripheral edge, the drive members being simultaneously displaceable in opposite directions in response to driver annulus rotation.

'20 A lock according to Claim 19, wherein said upper drive member and lower drive member are connected to the driver annulus by an upper and a lower rectilinearly displaceable drive slide resistant to buckling h respectively, each said drive slide comprising a member resistant to buckling having at one end a right-angled return portion to mate within a side recess of the driver annulus and at the other end an externally threaded portion to mate with internal threading in an end of the corresponding drive member.

'21 A lock according to Claim 20, wherein the externally threaded portion comprises a substantially cylindrical fitting having an axial aperture into which an offset extension of the drive slide extends to support the fitting.

'22 A lock according to Claim 21, including for each drive member an elongated flexible cable attached to the fitting for threading through the unfitted drive member so that during fitting the drive member can be slid along the cable into the frame of the wing whereupon the cable can be pulled taunt to guide the threaded end of the drive member into contact with the fitting to be rotated into threaded engagement.

'23 A lock according to Claim 18, wherein each drive member comprises a Bowden Cable having an inner cable having a right-angled return portion to mate within a side recess of the driver annulus peripheral edge.

'24 A lock according to Claim 23, wherein the side recesses for the upper and lower inner Bowden Cables are adjacently disposed and the upper and lower inner Bowden Cables displace simultaneously in the same direction.

'25 A lock according to Claim 5, including an angularly displaceable driver member comprising a disc-like annular driver connected to the deadlocking slide by a displaceable deadlocking slide extension and having an undisplaced disposition,

said driver member being connectable to at least one remote engaging member to be able actuate the remote engaging member, and member being

the driver member being displaceable towards the undisplaced disposition by displacement of the deadlocking slide from the deadlocking configuration and displaceable from the undisplaced disposition by displacement of the deadlocking slide towards the deadlocking configuration.

'26 A lock according to Claim 25, wherein the pivotal axis of the diver member is substantially midway between the front and rear edges of the casing and orthogonal to the sides of the casing while the pivotal axis of the unlatching lever is parallel and rearwardly disposed of the driver member pivotal axis.

'27 A lock according to Claim 26, including an upper and a lower remote engaging member each vertically removed from the casing, said remote engaging members being operably connected to the driver member by an upper vertically elongated drive member resistant to buckling h and a lower vertically elongated drive member resistant to buckling respectively to be simultaneously actuateable.

'28 A lock according to Claim 27, including an upper drive member connected to a first side recess in the driver annulus adjacent the peripheral edge and a lower drive member connected to a radially opposed second side recess in the driver annulus adjacent the peripheral edge, the drive members being simultaneously displaceable in opposite directions in response to driver annulus rotation.

'29 A lock according to Claim 27, wherein each drive members comprises a Bowden Cable having an inner cable having a right-angled return portion to mate within a side recess of the driver annulus peripheral edge.

'30 A lock according to Claim 29, wherein the side recesses for the upper and lower inner Bowden Cables are adjacently disposed and the upper and lower inner Bowden Cables displace simultaneously in the same direction.

'31 A lock according to Claim 13 or any claim dependent on Claim 13, including a driver locking slide connected to the deadlocking slide to be displaced into a driver

locking recess of the driver member when the deadlocking slide is displaced to the deadlocking configuration whereby to restrain the driver member against displacement.

'32 A lock according to any one of the above claims, including a lock body mountable to a displaceable wing supported adjacent an opening and engageable means associated with an element defining in part the opening, said lock body including a casing and an engaging member supported by the casing and displaceable between a a fully displaced disposition corresponding to the engaging member and engaging means cooperating in engagement to restrain the wing against displacement in an opening direction and a fully retracted disposition in which it is not so engaged with the engageable means.

'33 A lock according to Claim 32, wherein the engaging member is biased towards the fully displaced disposition and is characterized by a pre-latching configuration in which it is restrained from being displaced towards the fully displaced disposition.

'34 A lock according to Claim 33, including an outwardly biased auxiliary bolt to cooperate with the engaging member to restrain the engaging member in the pre-latching configuration, said auxiliary bolt being inwardly displaceable to preclude said engagement.

'35 A lock according to Claim 33, wherein the engaging member comprises a strike plate and wherein a portion of the latch bolt protrudes from the casing in the pre-latching configuration to be engaged on either side by the strike plate during latching to be inwardly displaced by the strike plate, said portion being similarly profiled on both sides, said profiling comprising a radius, curve or chamfer or other such form.

'36 A lock according to any one of claims 32 to 34, wherein the engageable means comprises a strike plate and the wing comprises a hinged door or the like.

'37 A lock according to any one of claims 32 to 35, wherein the engageable means comprises a catch and the wing comprises a sliding door or the like.

'38 A lock according to any one of the above claims, wherein the engaging member comprises a rectilinearly displaceable latch bolt.

'39 A lock according to Claim 38, wherein the latch bolt supports at least one displaceable hooking arm having an engaging shoulder that protrudes from a side of the bolt when the bolt is fully extended.

'40 A lock according to any one of claims 1 to 37, wherein the engaging member comprises an angularly displaceable latch bolt.

'41 A lock according to Claim 38, wherein the engaging member comprises a drive bolt that is outwardly displaceable by operation of each unlatching lever.

'42 A lock according to any one of claims 33 to 41, including a hand operable locking member and a displaceable deadlocking slide supported within the casing and characterized by a deadlocking configuration in which a leading end of the deadlocking slide and the engaging member co-operate to restrain the engaging member from being displaced from the fully displaced position,

wherein the deadlocking slide is biased towards and displaceable into the deadlocking configuration by a deadlocking slide biasing means,

the deadlocking slide being displaceable from the deadlocking configuration by the locking cam to a spring-loaded restrained configuration where an arm of the locking cam overlaps an exit shoulder of the deadlocking slide,

the locking cam being displaceable subsequently to release the deadlocking slide to enable it to be displaced by deadlocking slide biasing means to abut the engaging member in the pre-latching configuration and where on latching to be displaced into the deadlocking configuration.

'43 A lock according to claim 42, wherein the deadlocking slide includes an accelerator to displace the locking cam to overlap the exit shoulder of the deadlocking slide.

'44 A lock according to claim 42, including a compression spring supported within a spring recess between a spring wing of the deadlocking slide and an end of the spring recess.

'45 A lock according to Claim 3 or any claim dependent on Claim 3, including a key operable cylinder having an angularly displaceable cylinder cam having a cylinder cam arm that protrudes into a drive recess of the deadlocking slide to operably couple the deadlocking slide and cylinder to enable the deadlocking slide to be displaced into and out of the deadlocking configuration by the cylinder.

'46 A lock according to Claim 45, wherein the cylinder arm is displaceable from the drive recess to abut an exit shoulder of the deadlocking slide when the lock is in a first locked configuration to restrain the deadlocking slide against displacement by means other than operation of the cylinder.

'47 A lock according to Claim 46, wherein the deadlocking slide includes a slide spring having a spring arm that is displaced by the cylinder cam as it departs the drive recess, said slide spring biasing the cylinder cam arm against leaving the drive recess.

'48 A lock according to Claim 45 or any claim dependent on Claim 45, including a stop pin to limit the displacement of the deadlocking slide whereby to restrict the first cam from leaving the drive recess.

'49 A lock according to Claim 45 or any claim dependent on Claim 45, wherein the cylinder comprises a double free rotation cylinder.

'50 A lock according to any one of the above claims, where the unlatching lever comprises a ball.

'51 A lock according to any one of the above claims, where the unlatching lever comprises a lever having a radially protruding extension.

'52 A lock according to any one of the above claims, wherein a fully displaced disposition embraces an operative disposition and a fully retracted disposition embraces an inoperative disposition.

'53 A lock substantially as described herein with reference to and as illustrated in the accompanying drawings.

'54 Complete locks for displaceable wings and improvements for locks for displaceable wings substantially as described herein with reference to and as illustrated in the accompanying drawings.

AMENDED CLAIMS

[received by the International Bureau on 01 November 2004 (01.11.04);
original claim 7 replaced by new claim 7; remaining claims unchanged (1 page)]

'7 A lock according to Claim 6, wherein the operating means comprises an interior unlatching cam corresponding to the interior unlatching lever and an exterior unlatching cam corresponding to the exterior unlatching lever,

and wherein the locking member is operably connected to a lever locking cam supported within the exterior handle assembly,

said deadlocking slide being displaceable to the deadlocking configuration by the locking member simultaneously as the lever locking cam is displaced to a locking disposition where it causes the exterior unlatching lever to be restrained against displacement,

the deadlocking configuration being characterised by the second arm of the unlatching rocker being forward of a leading end of the deadlocking slide, the interior unlatching lever being displaceable to displace the interior unlatching cam to displace the unlatching rocker whereby to cause the second arm to contact the leading end of the deadlocking slide to displace the deadlocking slide away from deadlocking engagement to enable the engaging member to be displaced towards the fully retracted disposition while simultaneously causing the lever locking cam to be displaced from the locking disposition to free the exterior unlatching lever.

'8 A lock according to Claim 7, wherein the leading end of the deadlocking slide includes the engaging shoulder and an adjacently disposed ramped unlocking shoulder, and wherein the deadlocking configuration is further characterized the ramped unlocking shoulder being behind a nose portion of the second arm of the unlatching rocker.

'9 A lock according to Claim 8, where the unlocking shoulder is engageable by the nose portion to be displaced from the engaging member as the nose portion slides over the upwardly ramped edge defining the unlatching shoulder.

'10 A lock according to Claim 7, wherein the lever locking cam is displaced towards the locking configuration when the deadlocking slide is displaced to the deadlocking configuration, the locking of the exterior unlatching lever comprising displacement of a stop blade of a stop slide into a stop slot of a cupped member connected to the exterior unlatching lever, the stop slide being displaced towards the cupped member against biasing means by angular displacement of the lever locking cam, the angular displacement causing one of a pair engaging shoulders to slide over a lower substantially horizontally surface of the stop slide to enter a radially defined recess.